

## [12]实用新型专利说明书

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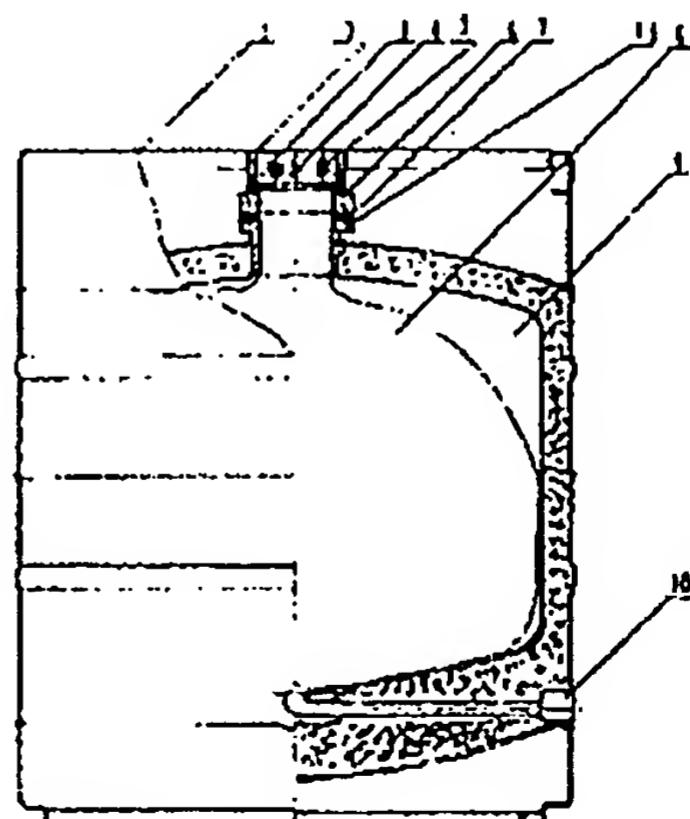
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[54]实用新型名称 背压式真空保鲜桶

[57]摘要

一种背压式真空保鲜桶。它有带保温层的外桶，内胆和进出酒阀，及在内胆口上方的护罩，其特征是在护罩底盘上装有稳压阀，管道阀和进气阀三只阀门，并在内胆口边缘设置一只与内腔相吻合的袋形气囊，该气囊凭借护罩下方的一只圆形压圈与硅胶垫及螺栓紧固密封在内胆口上。其特点是大大减少了鲜啤酒的浪费并延长了保鲜期达十余天，而且由于背压灌酒使灌入的啤酒是酒液而不是泡沫，因此为实现自动计量和灌装的半自动化奠定了基础。



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## 权 利 要 求 书

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- 1、 一种背压式真空保鲜桶，它有带保温层的外桶（1）及其内的内胆（9）和进出酒阀（10）及在内胆（9）口上方的护罩（2），其特征在于护罩（2）底盘上装有稳压阀（3），管道阀（4）和进气阀（5），并在内胆（9）口边缘设置一只与内腔相吻合的袋形气囊（8），该气囊（8）凭借护罩（2）下方的一只圆形压圈（6）与硅胶垫（7）及螺栓（11）紧固密封在内胆（9）口上。
- 2、 根据权利要求 1 所述的保鲜桶，其特征在于内胆（9）被抽为真空。
- 3、 根据权利要求 1 或 2 所述的保鲜桶，其特征在于上述气囊（8）为可以充气和放气而使空气始终不与酒体接触的复合膜，

# 说 明 书

## 背压式真空保鲜桶

本实用新型涉及一种背压式真空保鲜桶。

已有各种啤酒桶，在灌装（酒）时，由于啤酒管道内压力较大（0.1-0.6Mpa）且流速较快，灌入酒桶时的释压和搅动使酒中富含的CO<sub>2</sub>气体迅速膨胀而携酒溢出桶外，桶内则是泡沫和酒液的混合体，难以进行酒液计量，仍然要凭泡沫溢出的多少或溢出时间的长短来主观经验上控制灌酒量，显然这样不仅浪费了大量啤酒，而且灌酒量无法保证一致；此外放酒时桶内胆与大气连通，空气携带各种细菌及大量污染物和氧气使啤酒变质，大大缩短保鲜期而影响了啤酒的储运和使用。

本发明的目的是克服已有技术的不足，提供一种背压式真空保鲜桶，为啤酒企业提供一种绿色包装容器，实现节省与自动计量和远程销售，也为消费者提供真正环保卫生的新鲜啤酒，实现绿色消费。

本实用新型的技术方案是在内胆中放置一与内腔相吻合的复合膜制成的袋式气囊，可以充气和放气使空气与酒液永不接触；在内胆口护罩内设置一个具有背压灌酒和常压放酒作用的成液装置，该装置是在护罩的底盘上安装的与内腔室中的气囊相通的三只阀门：稳压阀、管道阀和进气阀连同上述气囊组成，并在技术上保证密封可靠不漏气。并考虑到消除空气污染源，将已有的放酒阀以进出酒阀代替，出厂时由该阀抽真空，使内胆真正形成真空状态。

附图为本实新型的总体结构示意图。

本实用新型有带保温层的外桶1及其内的内胆（腔）9和进出酒阀10，及在内胆9口上方的护罩2，其特征是在护罩2底盘上装有稳压阀3，管道阀4和进气阀5三只市售阀门，并在内胆9口边缘设置一只与内腔相吻合的袋形气囊8，该气囊8凭借护罩2下方的一只圆

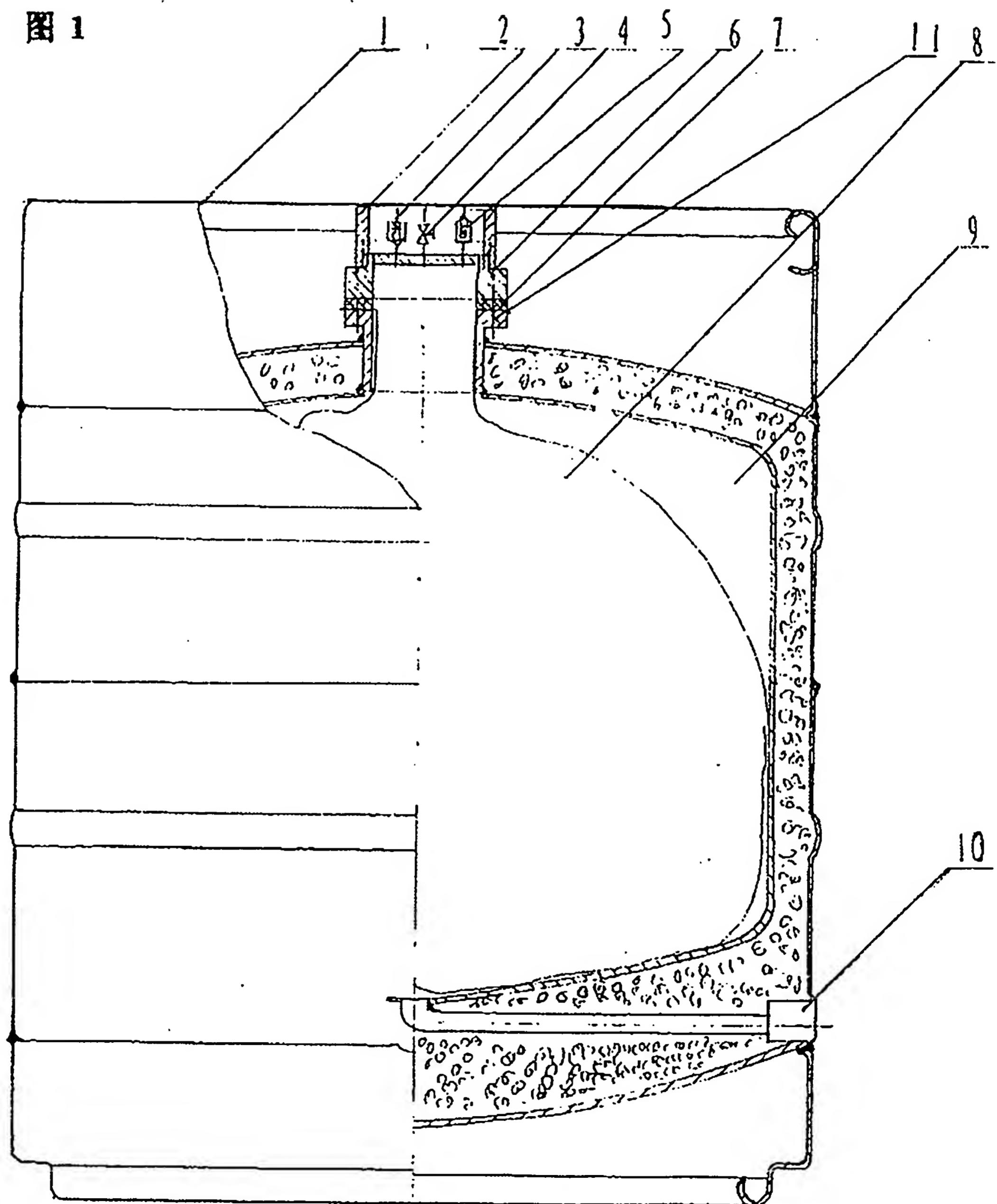
形压圈 6 与此同时硅胶垫 7 及螺栓 11 紧固密封在内胆 9 口上。上述气囊 8 为一无毒无味的复合膜，可以充气和放气而使空气始终不与酒体接触，也是背压灌酒而不产生泡沫的关键部件。

考虑到真空的杀菌作用，进一步还可以将内胆 9 通过进出酒阀 10 抽成真空后作为产品出厂，即内胆 9 在罐酒前为真空状态。

当灌酒时首先将进气阀 5 接通压缩空气，对气囊进行充气，使气囊膨胀，此时气囊 8 紧贴在内胆壁上。当气囊中的压力升高到 0.1Mpa 时，稳压阀 3 开始排气，此时关闭压缩空气使气囊内保持 0.1Mpa 的背压，这时将酒压为 0.12Mpa 的生啤酒灌酒枪与进出酒阀 10 对接，在 0.1Mpa 的背压下啤酒平稳快速的进入啤酒桶内，随啤酒的进入气囊收缩，囊内压力升高至稳压阀 3 开始排气，使气囊中的背压始终保持在 0.1Mpa，酒桶灌满达到设定值时气囊紧贴于内胆上壁，在背压状态下灌入的啤酒是酒液而不是泡沫，这就从根本上杜绝了泡沫的产生及其溢出的问题。

销售时，只需将管道阀 4 打开使气囊与大气联通就可随时放酒销售，即常压放酒。放酒时空气进入气囊充气膨胀，随时补充放出酒液而形成的真空。本实用新型在出厂、罐装和销售过程中始终不与空气接触，保持了生啤酒的新鲜度，保鲜期可达十余天，操作也十分方便。显然本实用新型不仅大大减少了鲜啤酒的浪费延长了保鲜期，而且由于背压灌酒使灌入的啤酒是酒液而不是泡沫，因此为实现自动计量和灌装的半自动化奠定了基础。

图 1



## BACK PRESSURE TYPED FRESH-RETAINING VACUUM BARREL

The present invention relates to a back pressure typed fresh-retaining vacuum barrel.

There are a variety of beer barrels. When the barrel is filled with beer, since the pressure in the piping is higher (0.1-0.6 Mpa) and the fluid speed is larger, the rich CO<sub>2</sub>-containing air expends quickly and brings the beer out of the barrel as a result of pressure relief and agitation, therefore in the barrel is a mixture of the foam and the wine fluid. It is hard to measure the wine fluid. It is necessary to estimate the pouring wine volume with empiristic way based on the amount of the spillage foam and the spillage duration length. Evidently not only a large number of beer is wasted but also the consistence of the wine volume can not maintained. Furthermore the internal of the barrel is communicated with atmosphere when pouring the beer, the airborne bacteria and a large amount of contamination as well as oxygen make the beer deteriorated and greatly shorten the fresh-retaining period so as to affect the transportation and use of the beer.

It is a subject of the invention to provide a back pressure typed fresh-retaining vacuum barrel in order to overcome the disadvantage of the prior art. It supplies a green package container for the beer manufacturer in respect of saving and auto-metering as well as remote distribution, on the other hand, fresh beer being friendly with environment is provided to the consumer to achieve green consume.

The technical solution of the invention is that a balloon made of composite film engaged with the internal is placed in the internal; the balloon can be filled and discharged to make air not come into contact with the wine fluid; in the shield cover of the internal opening there is provided fluid formation means with the function of filling wine under back pressure and discharging wine under normal pressure, the formation means consist of three valves ( i.e. pressurizer valve, line valve and charging valve ) installed on the bottom of the shield cover which is communicated with the balloon in the inside chamber together with the above mentioned balloon, it is ensured that the means are sealed without any leakage. The wine charging and discharging valve substitutes for the wine discharging valve. The wine charging and discharging valve has been vacuumized when delivery to make the internal in vacuum state.

The attached drawing is a schematically representation of the overall structure of the novelty back pressure typed fresh-retaining vacuum barrel.

The back pressure typed fresh-retaining vacuum barrel has an outer barrel 1 with insulation layer, internal (chamber) 9 inside the barrel, and the wine charging and discharging valve 10 as well as the shield cover 2 above the opening of the internal 9, characterized in that on the bottom of the shield cover 2 there are pressurizer valve 3, line valve 4 and charging valve 5 which may be available on the market, there is provided a balloon 8 engaged with the internal on the edge of the internal 9 opening, the balloon 8 is tightly sealed on the internal 9 opening by means of a circular retaining ring 6 beneath the shield cover 2 and silicone washer 7 and bolts 11. The said balloon 8 is of composite film without toxin and odor, which may be filled and

discharged to make the air always not come into contact with the wine. This is the essential component that fills the wine under back pressure without any foams.

In consideration of the sterilization of vacuum, before delivery the internal 9 may be further vacuumized through the wine charging and discharging valve 10, that is, the internal 9 is in vacuum state before wine filling.

When filling the wine, first the charging valve 5 is communicated with pressurized air so that the balloon is inflated and engaged with the wall of the internal. When the pressure in the balloon increases to 0.1Mpa, the pressurizer valve 3 begins to discharge, at this time the pressurized air is shut off so that the balloon maintains the back pressure of 0.1Mpa, the beer gun with the wine pressure of 0.12Mpa is connected with the wine charging and discharging valve 10, the beer flows smoothly and rapidly into the beer barrel under the back pressure of 0.1Mpa, the balloon contracts as the beer flows in, the balloon pressure increases until the pressurizer valve 3 begins to discharge, the back pressure in the balloon maintains at 0.1Mpa, the balloon is engaged with the upper wall of the internal when the beer barrel is full filled reaching the predetermined value, the filling beer under back pressure is wine fluid rather than foams, the problem that the foam occurs and overflows is thoroughly eliminated.

When distribution it is required only to open the line valve 4 to make the balloon in communication with the atmosphere so that the beer may be on sell as required, i.e. discharging the wine under normal pressure. When discharging the air enters in balloon to expand and always replaces the vacuum as a result of wine discharging. The back pressure typed fresh-retaining vacuum barrel according to the invention is not in contact with the air during transportation, filling and distribution so that the beer keeps fresh, the fresh duration may extend to more than ten days, further the operation is convenient. It is evident that the back pressure typed fresh-retaining vacuum barrel according to the invention not only reduces the beer waste and prolongs the fresh duration, but also makes the establishment basis for the auto-metering and semi-automatization of charging since the filling beer is wine fluid rather than foams under back pressure.

CLAIMS

1. A back pressure typed fresh-retaining vacuum barrel has an outer barrel (1) with insulation layer, internal (9) inside the outer barrel, and the wine charging and discharging valve (10) as well as the shield cover (2) above the opening of the internal (9), characterized in that on the bottom of the shield cover (2) there are pressurizer valve (3), line valve (4) and charging valve (5), there is provided a balloon (8) engaged with the internal on the edge of the internal (9) opening, the balloon (8) is tightly sealed on the internal (9) opening by means of a circular retaining ring (6) beneath the shield cover (2) and silicone washer (7) and bolts (11).
2. The fresh-retaining barrel according to claim 1, characterized in that the internal (9) is vacuumized.
3. The fresh-retaining barrel according to claim 1 or 2, characterized in that the balloon (8) is of composite film, which may be filled and discharged to make the air always not come into contact with the wine.